

## **EXHIBIT 99**

### **Declaration of Steven Matson**

**IN THE UNITED STATES DISTRICT COURT  
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA  
CASE NO. 1:14-CV-954**

**STUDENTS FOR FAIR  
ADMISSIONS, INC.,**

**Plaintiff,**

**v.**

**UNIVERSITY OF NORTH  
CAROLINA et al.,**

**Defendants.**

**DECLARATION OF STEVEN MATSON**

## DECLARATION OF STEVEN MATSON

I, Steven Matson, hereby make this declaration from my personal knowledge and, if called to testify to these facts, could and would do so competently:

### **Background**

1. I am Dean of The Graduate School at The University of North Carolina at Chapel Hill (“UNC-Chapel Hill” or “University”) and have been in that role since 2008. I am a professor and former Chair of the Biology Department in the College of Arts and Sciences at UNC-Chapel Hill.

2. I have been a member of UNC-Chapel Hill’s faculty since 1983, and have done extensive teaching, mentoring, and research in the field of genetics, molecular biology and biochemistry.

3. I am a recipient of an American Cancer Society Faculty Research Award, and have served as a reviewer for the Journal of Molecular Biology, Biochemistry, Proceedings of the National Academy of Science and the Journal of Biological Chemistry. I served as an editorial board member for the Journal of Biological Chemistry from 2000-2005.

4. At UNC-Chapel Hill, I have taught a variety of courses at the undergraduate level, including: Current Topics in Biology, Advanced Molecular Biology, Advanced Cell Biology, and honors sections of Genetics and Molecular Biology. I also teach graduate students.

5. I was the 2004 recipient of UNC-Chapel Hill’s Tanner Award for Excellence in Undergraduate Teaching, and a 2005 Institute of Arts and Humanities Leadership Fellow.

6. I have served as a member of the Chancellor’s Advisory Committee, the Bank of America Distinguished Professorship review panel, and the Honors Program Faculty Advisory Board. I am a past member and chair of the Pre-Health Professions Advising Task Force and

have served on various University administrative review committees through the years. I am on the Graduate Records Exam Board and served as the Chair of the Board this past year.

7. Matson Decl. Ex. 1 is a true and correct copy of my CV. Matson Decl. Ex. 2 is a photograph of me from my UNC webpage.

### **Importance of Diversity at UNC-Chapel Hill**

8. Diversity among students is critical to achieving the mission of UNC-Chapel Hill, and is a great benefit to all educational programs at UNC-Chapel Hill because it lends itself to both diversity of thought and experience.

9. Experience on teams is simply better where there is a diverse group of individuals. Diversity of background, opinion and thought work together to improve the ultimate solution. Diversity also improves cross-cultural sensibilities, which will ultimately funnel down into individual research labs. Having a diverse student body makes for a far richer learning environment and changes the nature of questions being asked by students both in and out of the classroom.

10. Because of these compelling educational benefits, UNC-Chapel Hill currently is striving to increase diversity in its graduate student population. The diversity taken into consideration at the graduate school level includes racial diversity, but is much broader than racial diversity alone.

11. Our department hears from both outside employers and those within academia that they are looking for a diverse workforce.

12. Lack of racial diversity among faculty is a significant concern in academia, and racial diversity at the undergraduate and graduate levels is particularly important in creating a strong academic pipeline. If we don't have a diverse undergraduate population that includes

many minority students at top institutions, there won't be as many potential applicants to admit at the graduate level. It is crucial that we provide diverse students with the credentials, education, and experience needed to fulfill the requirements to get into graduate school.

13. Within all university science programs, the National Institute of Health ("NIH") emphasizes the need for diversity and offers training grants to encourage such an emphasis. When we send reports to the NIH, they want to see a diverse population of students. NIH's office is very focused on diversity and what programs universities can implement to help students succeed.

### **Conclusion**

14. In my many years of teaching and administration, I have personally observed and strongly support the educational benefits of diversity. Diversity is critically important to us in the graduate school, and we are working hard to increase the number of minorities in graduate school. Having diverse students in the undergraduate population at top schools like UNC-Chapel Hill is a critical step in creating a robust academic pipeline of talented and diverse students. Only then will we see greater numbers of minority students in graduate school, academia and industry.

I declare under penalty of perjury under the laws of the United States that the forgoing is true and correct.

Executed on: 7/12/2017

  
\_\_\_\_\_  
Steven Matson

## **Exhibit 1 to Matson Declaration**

*CURRICULUM VITAE***Steven W. Matson**

Department of Biology, CB# 3280, Coker Hall  
 The Graduate School, CB# 4010, Bynum Hall  
 University of North Carolina  
 Chapel Hill, NC 27599-4010  
 Phone: (919) 962-3521; (919) 962-0005  
 E-mail: smatson@bio.unc.edu

**Education**

B.A. Colgate University; Hamilton, NY  
 1976 - Mathematics  
 M.S. University of Rochester; Rochester, NY  
 1979 - Biochemistry  
 Ph.D. University of Rochester; Rochester, NY  
 1980 - Biochemistry; Thesis Advisor: Robert A. Bambara

**Professional Training**

1980-1983	Postdoctoral Fellow (with Charles C. Richardson) Department of Biological Chemistry Harvard Medical School
1983-1988	Assistant Professor, Department of Biology University of North Carolina at Chapel Hill
1988-1994	Associate Professor, Department of Biology University of North Carolina at Chapel Hill
1994-present	Professor, Department of Biology University of North Carolina at Chapel Hill

**Appointments**

1983-present	Curriculum in Genetics & Molecular Biology
1985-present	Program in Molecular Biology & Biotechnology
1985-1994	Academic Advisor in the General College
1994-1999	Academic Advisor in General College Honors Program
1997-2002	Associate Chair, Department of Biology
1998-present	Program in Molecular & Cellular Biophysics
1999-2002	Assistant Dean for Academic Advising
2002-2008	Chair, Department of Biology
2008	Interim Associate Director, IAH Leadership Program for Departmental Chairs
2008 – present	Dean, The Graduate School

## Major Research Interests

DNA repair and recombination  
Conjugative DNA transfer  
Helicase mechanisms and biological roles

## Honors and Awards

National Institutes of Health Genetics predoctoral trainee, 1977-1980  
Wallace O. Fenn Award for best thesis; Univ. of Rochester, 1981  
Jane Coffin Childs Fund Postdoctoral Fellowship, 1980-1983  
American Cancer Society Faculty Research Award, 1987-1992  
Class of 1996 Award for Excellence in Advising, 2001  
Learning Disabilities Services Access Award, 2002  
Tanner Award for Excellence in Undergraduate Teaching, 2004  
Institute for the Arts and Humanities Leadership Fellow, 2005  
Frank Porter Graham Graduate and Prof. Student Honor Society Member, 2007  
Institute for the Arts and Humanities Faculty Learning Community, 2011

## Professional Service (National)

6/1989	American Cancer Society Nucleic Acid and Protein Synthesis Review Panel
6/1990	National Institutes of Health; Biochemistry Study Section
11/1990	Department of Energy review panel
7/91-6/95	National Institutes of Health Physiological Chem. Study Section Member
3/1997	National Institutes of Health; Fellowship Application Review National Science Foundation; ad hoc reviewer
3/1998	National Institutes of Health; Fellowship Application Review
2000-2005	Editorial Board, The Journal of Biological Chemistry
2001	Co-Organizer, FASEB Summer Research Conference on Helicases
2004	National Institutes of Health; Biochemistry Study Section (ad hoc member)
2006	National Institutes of Health; MGA Study Section (ad hoc member)
2008	National Institutes of Health; special emphasis panel
2009	National Institutes of Health; stage I reviewer for challenge grants
2009 – 2014	Council of Graduate Schools, Government Relations Advisory Committee (chair)
3/2010	National Institutes of Health, K99-R00 review panel (ad hoc member)



11/2010	National Institutes of Health, K99-R00 review panel (ad hoc member)
2/2011	National Institutes of Health, Stage 1 reviewer
3/2011	Laney Graduate School at Emory University (external review team member)
10/2011	Graduate Studies Review at UC-Davis (external advisory committee member)
2/2012	National Institutes of Health, K99-R00 Stage 1 reviewer
4/2012	Life and Environmental Sciences Graduate program review team, University of Colorado at Boulder
10/2012	National Institutes of Health, K99-R00 Stage 1 reviewer
12/2012 – 2016	Board of Directors (elected), Council of Graduate Schools Chair, Finance and Audit Committee (2014 – 2015)
2013-2018	Board of Directors, Graduate Records Exam, Chair 2016/17
2014-2018	Board of Directors, TOEFL
2015	President-elect, North Carolina Council of Graduate Schools
3/2016	Graduate College Review, Cleveland State University (external consultant)
10/2016	Graduate College Review, University of Iowa (external advisory committee member)
2016	President (elected) North Carolina Council of Graduate Schools
2016	Graduate College Review, James Madison University
2016	University of Delaware, Review of Office of Graduate and Professional Studies (external consultant)

Reviewer for:

*Biochemistry*  
*Journal of Biological Chemistry (Editorial Board Member 2000-2005)*  
*Proceedings of the National Academy of Sciences*  
*Nucleic Acids Research*  
*Molecular Microbiology*  
*Genetics*  
*Journal of Bacteriology*  
*Science*  
*Nature*  
*The EMBO Journal*  
*Nature Structural and Molecular Biology*  
*Journal of Molecular Biology*  
*The FEBS Journal*

**Society Memberships**

Sigma Xi

## Graduate Students

Edgar R. Wood; 1984 – 1988

*Thesis:* The Biochemical Analysis of *Escherichia coli* Helicase IV and the Identification and Cloning of the Genetic Locus

*Current position:* Director, Biological Sciences, GlaxoSmithKline, Raleigh-Durham, NC  
Elaine E. Lahue; 1985 – 1989

*Thesis:* Characterization of the Proteins Involved in Nicking and Unwinding of the *Escherichia coli* F Plasmid During Bacterial Conjugation

*Current position:* Senior Researcher, Biochemistry, National University Ireland, Galway

Kathleen Kaiser-Rogers; 1985 – 1991

*Thesis:* *Escherichia coli* DNA Helicase II: Construction and Characterization of ATPase “A” Site Mutants and Deletion Mutants Involving Helicase II, Helicase IV and Rep Protein

*Current position:* Professor, Associate Director of Cytogenetics Laboratory, University of North Carolina at Chapel Hill

Janet E. Yancey-Wrona; 1985 – 1991

*Thesis:* Characterization of the *Escherichia coli* Rep Helicase DNA Unwinding Activity and the Effect of Two DNA Binding Proteins on this Reaction

*Current position:* CEO Bar Harbor Biotechnology, Portland, Maine

James W. George; 1988 – 1993

*Thesis:* Biochemical Analysis of the ATPase and Helicase Reaction Catalyzed by DNA Helicase II

*Current position:* Scientist at Lawrence Livermore National Laboratory, Livermore, CA

Veera M. Mendonca; 1988 – 1994

*Thesis:* Genetic and Biochemical Analysis of DNA Helicases in the RecF Pathway of Homologous Recombination in *Escherichia coli*

*Current position:* Unknown

Robert M. Brosh, Jr.; 1991 – 1996

*Thesis:* Biochemical and Genetic Characterization of Site-specific Mutants in Conserved Motifs of *Escherichia coli* DNA Helicase II

*Current position:* Chief, Section on DNA Helicases, Laboratory of Molecular Gerontology, National Institute on Aging, National Institutes of Health, Baltimore, MD

William C. Nelson; 1990 – 1996

*Thesis:* Characterization of the F Plasmid *traY* Gene Product and Its Role in Initiation of Conjugative DNA Transfer

*Current position:* Research Asst. Professor, Biological Sciences, University of Southern California, Los Angeles, CA

Devon C. Byrd; 1994 – 1998

*Thesis:* Analysis of a Conjugative DNA Transfer Initiation Complex

*Current position:* WMD Technical Analyst, Virginia

Mark C. Hall; 1994 – 1998

*Thesis:* *Escherichia coli* DNA Helicase II: Structure-function Analysis of Conserved Amino Acid Motifs and Investigation of Protein-protein Interactions

*Current position:* Associate Professor, Biochemistry, Purdue University

Leah Mechanic; 1994 – 1999

*Thesis:* *Escherichia coli* DNA Helicase II: Structure-function Study, Investigation of the Association State, and Examination of the Interaction with MutL

*Current position:* Program Director, National Cancer Institute, Division of Cancer Control and Population Sciences, Washington, DC

Adelaide Kern-Leitzel; 1994 – 2000

*Thesis:* Genetic Studies with *MMHI*, a Yeast Mitochondrial Helicase

*Current position:* Patent Agent at Taft, Stettinius & Hollister LLP, specializing in biotechnology, Cincinnati, OH

Zeynep Ozsoy; 1996 – 2002

*Thesis:* Biochemical Characterization of the *Drosophila melanogaster* RECQ5 DNA Helicase and Studies of *Escherichia coli* Helicase IV

*Current position:* Assistant Professor of Biology, Colorado Mesa University, Grand Junction, CO

Juliana K. Sampson; 1998 – 2004

*Thesis:* Characterization of the F plasmid TraI Gene Product and its Role in Conjugative DNA Transfer

*Current position:* Unknown

Adam B. Robertson; 2002 – 2007

*Thesis:* MutL Involvement in Two DNA Repair Pathways: Methyl-directed Mismatch Repair and Very Short Patch Repair

*Current position:* Postdoctoral Fellow, Uppsala, Sweden

Danny Monroe, Jr.; 2002 – 2008

*Thesis:* Hmi1p and UvrD: Two Superfamily I Helicases and their Respective Roles

in *S. cerevisiae* mtDNA Maintenance and *E. coli* Methyl-Directed Mismatch Repair

*Current position:* Department Head, Natural Sciences, Wake Technical Community College, Raleigh, NC

Matt Meiners; 2009 – 2014

*Thesis topic:* The mechanism of modulation of the *Escherichia coli* DNA Helicase II (UvrD) unwinding activity, a study of the 2B subdomain

*Current Position:* Research Scientist, Epiccypher, Chapel Hill, NC

Noelle Romero, 2010 – 2016

*Thesis topic:* The *Drosophila melanogaster* FANCM gene product

*Current Position:* Director, Chancellor's Science Scholars Program, University of North Carolina at Chapel Hill, Chapel Hill, NC

### **Undergraduate Honors Students**

Crista L. Herbert; 1985

Karen R. Smith; 1986

Stephen A. Treat; 1989

Robert J. Sheaff; 1989

Sujata V. Ghate; 1990

Shannon E. Goldsmith; 1992

Jonathan A. Sherman; 1994

Heidi D. Klepin; 1994

Amada Baker; 1996

M. Amelia Bruce; 1997

Jamie R. Jordan; 1998

Marcie E. Latta; 1998

Brenda Frankel; 2000

Erin Gibbons; 2003

Steven R. Pattishall; 2006

Ernesto Villareal; 2006

Carly A. Shanahan; 2007

Neeta Goli; 2007

Annamarie Carter; 2007

Diane Esson; 2009

Laura Tonks; 2011

Ryan Bradley; 2013

### **Postdoctoral Fellows**

Michael T. Howard; 1994

*Current Position:* Research Associate Professor, Human Genetics, University of Utah, Salt Lake City, UT

Daniel W. Bean; 2000

*Current Position:* Program Administrator, Conservation Services, Pest Control, Colorado Department of Agriculture

Kambiz Tahmaseb; 2012

*Current Position:* Instructor, Biochemistry, Vance-Granville Community College

## Teaching

1984-85	Cell and Developmental Biology (Biol 52) Graduate Seminar Course on DNA Replication (Biol 258)
1985-86	Cell and Developmental Biology (Biol 52) Graduate Seminar Course on Nucleic Acid Enzymes (Biol 258)
1986-87	Cell and Developmental Biology (Biol 52) Graduate Seminar Course on DNA Replication (Biol 258)
1987-88	Advanced Cell Biology (Biol 167)
1988-89	Advanced Cell Biology (Biol 167)
1989-90	Advanced Cell Biology (Biol 167)
1990-91	Advanced Cell Biology (Biol 167)
1991-92	Advanced Cell Biology (Biol 167)
1992-93	Advanced Cell Biology (Biol 167)
1993-94	Advanced Molecular Biology (Gnet 110; Biol 178) Genetics and Molecular Biology (Biol 53) Senior Honors Thesis (Biol 99)
1994-95	Advanced Molecular Biology (Gnet 110; Biol 178) Genetics and Molecular Biology (Biol 53) Senior Honors Thesis (Biol 99)
1995-96	Advanced Molecular Biology (Gnet 110; Biol 178) Genetics and Mol. Biology (Biol 50); Senior Honors Thesis (Biol 99)
1996-97	Advanced Molecular Biology (Gnet 110; Biol 178) Senior Honors Thesis (Biol 99)
1997-98	Advanced Molecular Biology (Gnet 110; Biol 178) Genetics and Molecular Biology (Biol 50)
1998-99	Advanced Molecular Biology (Gnet 110; Biol 178) Genetics and Molecular Biology (Biol 50)
1999-00	Advanced Molecular Biology (Gnet 110; Biol 178) Genetics and Molecular Biology (Honors section, Biol 50H)
2000-01	Advanced Molecular Biology (Gnet 110; Biol 178) Genetics and Molecular Biology (Honors section, Biol 50H)
2001-02	Advanced Molecular Biology (Gnet 110; Biol 178)
2002-03	Advanced Molecular Biology (Gnet 110; Biol 178) Genetics and Molecular Biology (Honors section, Biol 50H)
2003-04	Current topics in Biology (Biol 261) Genetics and Molecular Biology (Honors section, Biol 50H)
2004-05	Current topics in Biology (Biol 261) Genetics and Molecular Biology (Honors section, Biol 50H)
2005-06	Current topics in Biology (Biol 261)
2006-07	Current topics in Biology (Biol 890) Graduate Seminar in DNA repair (Biol 832)
2007-08	Current topics in Biology (Biol 701) Genetics and Molecular Biology (Honors section, Biol 202H)

2008-09	Undergraduate Research (Biol 395)
2009-10	Undergraduate Research (Biol 295)
	Undergraduate Research (Biol 395/6)
2010-11	Undergraduate Research (Biol 295)
	Undergraduate Research (Biol 395/6)
2011-12	Undergraduate Research (Biol 293/295)
2012-13	Undergraduate Research (Biol 293/295)
2013-14	Undergraduate Research (Biol 293/295)
2014-15	Undergraduate Research (Biol 293/Biol 295)
2015-16	Undergraduate Research (Biol 293/Biol 295)
2016-17	Undergraduate Research (Biol 293/Biol 295)

## University Service

Department of Biology, Chairman's Advisory Committee (current)  
 Department of Biology Space Committee (1990-1995)  
 University Radiation Safety Committee (1997-2008)  
 University Rhodes Scholars Nomination Committee (1995-2001)  
 Department of Biology Undergraduate Studies Committee  
 Department of Biology Undergraduate Honors Committee  
 Faculty Council (1995-1998; 2004-2007)  
 Fordham Hall design/construction committee (1987-89)  
 Curriculum in Genetics Admission Committee  
 Administrative Board of the General College  
 Applied Sciences Advisory Board  
 Curriculum in Genetics & Mol. Biology Written Exam Committee  
 Tuition Advisory Task Force, 2002, 2003, 2004, 2005  
 Sitterson/Sanders Teaching Award Committee, 2002  
 Member, Council of Chairs, College of Arts and Sciences, 2002-2008  
 Dean of Arts and Sciences Search Committee, 2003  
 Honors Program Faculty Advisory Board, 2003  
 Associate Vice Chancellor for Student Affairs Search Committee (Chair), 2003-04  
 Executive Committee of Faculty Council, 2004-2007  
 Genome Sciences Building Core Committee, 2004 – 2008  
 Chair, Council of Chairs, College of Arts and Sciences, 2005-06  
 Facilities and Administrative cost sharing committee, 2005-06  
 Institutional Conflict of Interest Task force, 2005-06  
 Administrative Review Committee (Vice Chancellor for Research) (Chair), 2006  
 Parental Leave for Graduate Students Working Group (Chair); 2006  
 Board of Governors Teaching Award Committee, 2006  
 UNC-BEST Implementation Working Group, 2006-2008  
 Pre-health Professions Advising Task Force (Chair), 2006-07  
 Director of Environmental Health and Safety Search Committee, 2007  
 Chancellors Advisory Committee, 2007 – 2010



Administrative Review Committee (Dean of Pharmacy), 2007  
 Study Abroad Advisory Committee, 2007 – 2013  
 UNC-BEST Steering Committee, 2008 – present  
 Bank of America Distinguished Professorship review panel, 2008  
 UCRF Peer Review Panel, 2008  
 Member, Deans Council, 2008 – present  
 Administrative Board of the Graduate School (Chair), 2008 – present  
 Enrollment Policy Advisory Committee, 2008 – present  
 Center for Faculty Excellence Advisory Board, 2008 – present  
 Advisory Committee on Postdoctoral Scholars, 2008 – present  
 ConnectCarolina Change Management Advisory Committee, 2008 – 2010  
 University Policy Budget Advisory Committee, 2009  
 ConnectCarolina Student Stakeholders Committee, 2009 – 2010  
 Search Committee, Vice Chancellor for Student Affairs (2009)  
 Search Committee (Chair), Associate Dean and Director, Academic Advising, 2010  
 Administrative Review Committee (Dean of Law School) (Chair), 2010  
 SACS Reaccreditation Steering Committee, 2011-12; 2016-17  
 Enterprise Applications Coordinating Committee, 2011 – 2014  
 Search Committee (Chair) Faculty Director, Center for Faculty Excellence, 2011  
 Search Committee, Vice President for Research, University of North Carolina  
     General Administration, 2011-12  
 Search Committee (Chair) Director, Academic Support Services for Athletes, 2012  
 Search Committee (Chair) Assoc. Vice Chancellor for Research Development, 2013  
 Administrative Review Committee (Dean of Pharmacy) (Chair), 2013  
 Administrative Review Committee (University Librarian) (Chair), 2014  
 Honorary Degrees and Special Awards Committee (elected) 2014-2017; 2017-2020  
     (Chair 2015-16, 2016-17, 2017-18)  
 Administrative Review Committee (Dean of Media and Journalism) (Chair) 2016  
 ERP Sponsors Committee 2017—present

## PhD Thesis

Matson, S.W. (1980) Detailed analysis of the translocation steps of DNA synthesis using prokaryotic and viral models

## Publications

- Matson, S.W., Capaldo-Kimball, F.N. and Bambara, R.A. (1978) On the processive mechanism of *Escherichia coli* DNA polymerase I: The *polA5* mutation, J. Biol. Chem. **253**:7851-7856.
- Matson, S.W., Fay, P.J. and Bambara, R.A. (1980) Mechanism of inhibition of the AMV DNA polymerase and the effect of adriamycin, Biochemistry **19**:2089-2095.
- Matson, S.W. and Bambara, R.A. (1981) Duplex DNA binding activity of the AMV DNA polymerase, Biochem. Biophys. Acta **652**:29-38.

- Matson, S.W. and Bambara, R.A. (1981) Short patch deoxyribonucleic acid repair patch length in *Escherichia coli* is determined by the processive mechanism of DNA polymerase I, *J. Bacteriol.* **146**:275-284.
- Matson, S.W. (1980) Detailed analysis of the translocation steps of DNA synthesis using prokaryotic and viral models, Ph.D. thesis.
- Tabor, S., Engler, M.J., Fuller, C.W., Lechner, R.L., Matson, S.W., Romano, L.J., Saito, H., Tamanoi, F. and Richardson, C.C. (1981) in Structure of DNA-Protein Interactions of Replication Origins, ICN-UCLA Symposia on Molecular and Cellular Biology, vol. XXII (ed. by D.S. Ray and C.F. Fox) pp. 387-408.
- Fuller, C.W., Beauchamp, B.B., Engler, M.J., Lechner, R.L., Matson, S.W., Tabor, S., White, J.H. and Richardson, C.C. (1983) Mechanisms for the initiation of bacteriophage T7 DNA replication, *Cold Spring Harbor Symp. Quant. Biol.* **48**:669-680.
- Matson, S.W., Beauchamp, B.B., Engler, M.J., Fuller, C.W., Lechner, R.L., Tabor, S., White, J.H. and Richardson, C.C. (1983) Enzymatic mechanisms of T7 DNA replication, in Mechanisms of DNA Replication and Recombination, UCLA Symposia on Molecular and Cellular Biology, New Series, vol. 10 (ed. by N.R. Cozzarelli) Alan R. Liss, Inc. New York, NY, pp. 135-151.
- Matson, S.W. and Richardson, C.C. (1983) DNA-dependent nucleoside 5'-triphosphatase activity of the gene 4 protein of bacteriophage T7, *J. Biol. Chem.* **258**:14009-14016.
- Matson, S.W., Tabor, S. and Richardson, C.C. (1983) The gene 4 protein of bacteriophage T7: Characterization of the helicase activity, *J. Biol. Chem.* **258**:14017-14024.
- Matson, S.W. and Richardson, C.C. (1985) Nucleotide dependent binding of the gene 4 protein of bacteriophage T7 to single-stranded DNA, *J. Biol. Chem.* **260**:2281-2287.
- Matson, S.W. and Wood, E.R. (1985) Production of antibodies directed against *Escherichia coli* helicase III and the molecular cloning of the helicase III gene, *J. Biol. Chem.* **260**:11811-11816.
- Matson, S.W. (1986) *Escherichia coli* helicase II (*uvrD* gene product) translocates unidirectionally in a 3' to 5' direction, *J. Biol. Chem.* **261**:10169-10175.
- Matson, S.W. and George, J.W. (1987) DNA helicase II of *Escherichia coli*: Characterization of the single-stranded DNA-dependent NTPase and helicase activities, *J. Biol. Chem.* **262**:2066-2076.
- Wood, E.R. and Matson, S.W. (1987) Purification and characterization of a new DNA-dependent ATPase with helicase activity from *Escherichia coli*, *J. Biol. Chem.* **262**:15269-15276.
- Sung, P., Prakash, L., Matson, S.W. and Prakash, S. (1987) The RAD3 protein of *Saccharomyces cerevisiae* is a DNA helicase, *Proc. Natl. Acad. Sci. USA*, **84**:8951-8955.
- Goetz, G., Dean, F.B., Hurwitz, J. and Matson, S.W. (1988) The unwinding of duplex regions in DNA by the Simian Virus 40 large tumor antigen associated DNA helicase activity, *J. Biol. Chem.* **263**:383-392.
- Lahue, E.E. and Matson, S.W. (1988) *Escherichia coli* DNA helicase I catalyzes a unidirectional and highly processive unwinding reaction, *J. Biol. Chem.* **263**:3208-3215.



- Dean, F.B., Dodson, M., Borowiec, J.A., Ishimi, Y., Goetz, G.S., Bullock, P., Matson, S.W., Echols, H. and Hurwitz, J. (1988) SV40 origin-dependent DNA unwinding and nucleoprotein complex formation by SV40 T antigen, in Cancer Cells 6/Eukaryotic DNA Replication, Cold Spring Harbor Laboratory, pp. 113-121.
- Smith, K.R., Yancey, J. and Matson, S.W. (1989) Purification and characterization of a protein factor which stimulates the helicase activity of Rep protein, J. Biol. Chem. **264**:6119-6126.
- Wood, E.R. and Matson, S.W. (1989) The molecular cloning of the gene encoding the *Escherichia coli* 75-kDa helicase and the determination of its nucleotide sequence and genetic map position, J. Biol. Chem. **264**:8297-8303.
- Matson, S.W. (1989) *Escherichia coli* helicase II (*uvrD* gene product) catalyzes the unwinding of DNA:RNA hybrids *in vitro*, Proc. Natl. Acad. Sci. USA, **86**:4430-4434.
- Lahue, E.E. and Matson, S.W. (1990) Purified *Escherichia coli* F-factor TraY protein binds *oriT*, J. Bacteriol. **172**:1385-1391.
- Matson, S.W., George, J.W., Kaiser-Rogers, K.A., Lahue, E.E., Wood, E.R. and Yancey, J.A. (1990) The DNA helicases of *Escherichia coli*, in Mechanisms of DNA Replication and Recombination, UCLA Symposia on Cellular and Molecular Biology, New Series (ed. by C.C. Richardson and R. Lehman) Academic Press, **127**:127-139.
- Kaiser-Rogers, K.A. and Matson, S.W. (1990) DNA Helicases, Annu. Rev. Biochem, **59**:289-329.
- Matson, S.W. (1991) The DNA helicases of *Escherichia coli*, Prog. in Mol. Biol. and Nuc. Acids Res. **40**:289-326.
- Yancey, J.E. and Matson, S.W. (1991) The DNA unwinding reaction catalyzed by *Escherichia coli* Rep protein is facilitated by an RHSP-DNA interaction, Nucleic Acids Res. **19**:3943-3951.
- Matson, S.W. and Morton, B.S. (1991) DNA Helicase I Catalyzes a Site and Strand-Specific Nicking Reaction at the F Plasmid *oriT*, J. Biol. Chem. **266**:16232-16237.
- George, J.W., Ghate, S., Matson, S.W. and Besterman, J.M. (1992) Inhibition of DNA Helicase II Unwinding and ATPase Activities by DNA Interacting Ligands: Kinetics and Specificity, J. Biol. Chem. **267**:10683-10689.
- Yancey, J.E., Wood, E.R., George, J.W., Smith, K.R. and Matson, S.W. (1992) *Escherichia coli* Rep Protein and Helicase IV: Distributive single-stranded DNA-dependent ATPases That Catalyze a Limited Unwinding Reaction *in vitro*, Eur. J. Biochemistry **207**:479-485.
- Yancey-Wrona, J.E. and Matson, S.W. (1992) Bound Lac Repressor Protein Differentially Inhibits the Unwinding Reactions Catalyzed by DNA Helicases, Nucleic Acids Res. **20**:6713-6721.
- Nelson, W.C., Morton, B.S., Lahue, E.E. and Matson, S.W. (1993) Characterization of the *Escherichia coli* F factor *traY* gene product and its binding sites, J. Bacteriol. **175**:2221-2228.
- Matson, S.W., Nelson, W.C. and Morton, B.S. (1993) Characterization of the reaction product of the *oriT* nicking reaction catalyzed by *Escherichia coli* DNA helicase I, J. Bacteriol. **175**:2599-2606.

- Mendonca, V.M., Kaiser-Rogers, K.A. and Matson, S.W. (1993) Double helicase II (*uvrD*)-helicase IV (*helD*) Deletion Mutants are defective in the recombination pathways of *Escherichia coli*, *J. Bacteriol.* **175**:4641-4651.
- Bean, D.W., Kallam, W.E. Jr. and Matson, S.W. (1993) Purification and Characterization of a DNA Helicase from *Saccharomyces cerevisiae*, *J. Biol. Chem.* **268**:21783-21790.
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Sampson, J.K., Leonard, K., Haisch, D. and Matson, S.W. (2017) The F Plasmid TraI Transesterase Active Site Residue(s), (in preparation).

### Past Grant Support (since 2000)

Submitted	Project Name	Lead PI	Sponsor	Status
5/31/2017	Understanding PhD Career Pathways	Steve Matson	Council of Graduate Schools	Funded
3/3/2015	Distance delivered professional skills course	Steve Matson	University of North Carolina General Administration	Funded
11/26/2011	Expansion of the UNC System-wide Professional Science Master's Initiative	Steve Matson	North Carolina State University	Funded
05/12/2010	DNA helicases	Steve Matson	National Institute of General Medicine Science	Funded
04/14/2009	DNA Helicases	Steve Matson	National Institutes of Health (NIH)	Funded
07/07/2008	UNC-Best	Kevin Stewart	US Department of Education	Funded
06/06/2007	DNA helicases	Steve Matson	National Institutes of Health (NIH)	Funded
06/20/2006	Single Molecule Nucleic Acid Enzymology	Steve Matson	University of Arkansas	Funded
04/28/2005	Enzymatic Mechanisms of DNA Helicases	Steve Matson	National Institute of General Medicine Science	Funded
01/24/2005	Mechanism of Conjugative DNA Transfer	Steve Matson	National Institute of General Medicine Science	Funded
04/26/2004	Enzymatic Mechanisms of DNA Helicases	Steve Matson	National Institutes of Health	Funded
01/20/2004	Mechanism of Conjugative DNA Transfer	Steve Matson	National Institutes of Health	Funded
04/25/2003	Enzymatic Mechanisms of DNA Helicases	Steve Matson	National Institute of General Medicine Science	Funded
02/03/2003	Mechanism of Conjugative DNA Transfer	Steve Matson	National Institute of General Medicine Science	Funded
10/25/2001	Enzymatic Mechanisms of DNA Helicases	Steve Matson	National Institutes of Health	Funded



04/23/2001	Enzymatic Mechanisms of E. coli Helicases	Steve Matson	National Institute of General Medicine Science	Funded
02/21/2001	Mechanism of Conjugative DNA Transfer	Steve Matson	National Institutes of Health	Funded
04/30/2000	Enzymatic Mechanisms of E. coli Helicases	Steve Matson	National Institute of General Medicine Science	Funded

## Current Grant Support

## Plenary Seminars

Keystone Symposium on Molecular Mechanisms in DNA Replication  
and Recombination

Taos, New Mexico January 1992

EMBO Workshop on the Molecular Biology of DNA Replication

Lucerne, Switzerland September 1992

Plasmid Biology '94

Banff, Alberta, Canada August 1994

Enzymology of DNA-Strand Transfer Mechanisms

Madrid, Spain April 1996

DNA Helicases as Motor Proteins

Madrid, Spain November 1999

DNA Helicases in Cancer and Aging – Keystone Symposium

Tahoe City, CA March 2002

Plasmid Biology 2002

Pittsburgh, PA June 2002

International Meeting on Werner Syndrome

Washington, DC May 2003

DNA Helicases: Structure, Mechanisms and Roles in Human Disease

FASEB, Saxtons River, VT June 2003

DNA Helicases: Structure, Mechanisms and Roles in Human Disease

Arolla, Switzerland July 2005

Plasmid Biology 2006

Fallen Leaf, CA September 2006

Helicases and NTP-Driven Nucleic Acid Motors: Structure, Function, Mechanism  
and Roles in Human Disease  
FASEB, Palm Springs, CA      June 2007

**Invited Research Seminars (since 1995)**

Department of Biochemistry; University of North Carolina at Chapel Hill  
November 1995  
Biology/Chemistry joint seminar; Colgate University  
November 1995  
Becton-Dickinson Pharmaceutical  
October 1995  
Glaxo-Wellcome Inc.; Research Triangle Park  
February 1996  
University of Washington - Pathology Dept.  
August 1996  
University of North Carolina – Chemistry Department  
February 1998  
National Institute on Aging, National Institutes of Health; Baltimore, MD  
September 21, 1998  
Vanderbilt University – Department of Molecular Biology; Nashville, TN  
November 18, 1998  
National Institute of Environmental Health Science; Research Triangle Park, NC  
February 15, 2000  
University of North Carolina – Chemistry Department  
December 2000  
University of Miami – Biochemistry Department; Miami, FL  
December 8, 2000  
National Institutes of Health; Bethesda, MD  
March 12, 2001  
Sphinx Pharmaceuticals; Research Triangle Park, NC  
March 14, 2001  
University of Buffalo; Buffalo, NY  
February 28, 2003  
University of Arkansas for Medical Sciences  
Department of Biochemistry and Molecular Biology  
October 12, 2005  
National Institutes of Environmental Health Sciences  
Laboratory for Molecular Genetics Retreat  
October 17, 2005  
National Taiwan University; Taipei, Taiwan  
September 2006

## **Invited Presentations as Dean, The Graduate School**

Council of Graduate Schools Annual Meeting; Washington, DC; Fundraising Workshop; December, 2008

Council of Graduate Schools Annual Meeting; San Francisco, CA; Budget Panel December; 2009

Council of Graduate Schools Summer Meeting; Puerto Rico; Political Engagement Panel; July, 2010

Council of Graduate Schools Annual Meeting; Washington, DC; Fundraising Workshop; December; 2010

Council of Graduate Schools Summer Meeting; Monterrey, CA; Communicating the Role and Importance of Graduate Education; July, 2011

Association of Graduate Schools (AAU) Annual Meeting, Washington, DC; Diversity in Graduate Education; September 2011

Council of Graduate Schools Annual Meeting; Phoenix, AZ; Fundraising Workshop; December, 2011

Council of Graduate Schools Summer Meeting; Boston, MA; Political Engagement; July, 2012

Council of Graduate Schools Annual Meeting; Washington, DC; Fundraising Workshop; December, 2012

Council of Graduate Schools Annual Meeting; San Diego, CA; Fundraising Workshop; December, 2013

Council of Graduate Schools Summer Meeting; Portland, OR; Political Engagement; July, 2014

Council of Graduate School New Deans Institute; Quebec City, Canada; Advocacy 101; July, 2015

Association of Graduate Schools (AAU) Annual Meeting, Atlanta, GA; Engaging Alumni; September 2015

Council of Graduate Schools Global Summit – Implications of Big Data for Graduate Education, Singapore, September 27-29, 2015.



Council of Graduate Schools Annual Meeting; Seattle, WA; Fundraising Workshop; December, 2015

Council of Graduate School New Deans Institute; Savannah, GA; Advocacy 101; July, 2016

Association of Graduate Schools (AAU) Annual Meeting, San Diego, CA; Making Data Public, September 2016

Council of Graduate Schools Annual Meeting; Washington, DC; Fundraising Workshop; December, 2016

## **Exhibit 2 to Matson Declaration**

